good luck, but he and his companion, Mr. James L. Clark, were also possessed of singular courage and skill both as photographers and marksmen, and, if need be, mechanicians. Good luck gave them the chance of a telephotograph of Kilimanjaro, eighty miles distant, which is one of the weirdest mountain pictures the present writer has even seen, and confirms his old story of twenty-five years ago that Kilimanjaro, in certain aspects, resembled Swift's floating-island of Laputa. Amongst other episodes of singular good fortune was the photographing of the still very rare black Forest pig. This creature, the existence of which was rumoured by Stanley, George Grenfell, and the present writer in the Congo Forests, was actually first revealed to science by Captain Meinertzhagen and Mr. C. W. Hobley, far away from the Congo basin, on the Nandi plateau and round Mount Kenia (though it was soon afterwards obtained from the north-east Congo, and finally from the Cameroons). But specimens of it are still scarcer than those of the okapi, and to have photographed the creature, *wild and in its forest home,* is an episode that probably Mr. Dugmore never anticipated, even in his rosiest anticipations.

The book gives unrivalled pictures of the fauna of Equatorial East Africa, of that singularly fascinating region between Kilimanjaro on the south and the Guaso Nyiro on the north, the Rift Valley on the west and the Tana River on the east. Here there are long ranges of mountains that only fall just short of the level of perpetual snow, and there are the snowfields and glaciers of Kenya, rendered marvellously well in Mr. Dugmore's pictures. Immense grassy plains, dense thorn scrubs, lakes peopled with flamingoes, splendid equatorial forests recalling those of West Africa, deep water-courses or canyons, broad rivers with great herds of hippopotami and monstrous crocodiles, and patches of camel-frequented desert—all these phases of physical geography are admirably illustrated, in addition to the pictures of beasts, birds, and indigenous mankind. We are getting almost tired of lions since the advent on the scene of the flash-light photographer: the lion and lioness, indeed, seem to be almost like the popular actress or politician in their desire and willingness to be photographed in interesting attitudes. But although this book has some of the best lion pictures I have ever seen, it will probably be more noteworthy for its photographs of charging rhinoceroses, of buffaloes passing through the long grass, or hiding themselves at noon-day in dense forest. Another notable feature is the numerous studies of giraffes, sometimes looking exactly like withered tree stumps, at others suggesting prehistoric monsters. The most striking of these giraffe studies (and the most beautiful) is that where, by means of a telephotograph, a large herd of giraffe, and a smaller herd of Grant's zebra, are shown together in an immense tract of savannah country dotted with acacias. If that does not suggest the Pleistocene at its best, we do not know what does, The geographical scope of the book extends far enough north to include the Samburu and their camels, camels which have suggested to more than one observer, British or Italian, the possibility of their being derived from a wild camel which may still exist in the remotest, as yet completely unexplored, parts of Galaland.

The book opens with an appeal "to the lovers of sport, and perhaps to those who consider themselves as such, but whose only claim is the insatiate love for killing which characterises their idea of sport." The author goes on to state that, like many others brought up to the use of firearms, he considered the man who did not shoot a very inferior person, in fact, unmanly. But as the years went by he himself became more deeply interested in natural history, and the idea of killing for killing's sake lost its fascination. In time he found that the most thrilling sport of all was the studying of the life of animals in their native wilds rather than in the killing of them merely to possess the skin or other trophies. Enough is said in his book to show that he and his companion ran, perhaps, greater risks in their attempt to snapshot charging rhinoceroses, lions, and buffaloes than would the sportsman who was merely out to kill, while the acrobatics necessitated in natural-history photography are enough to prove that the follower of this sport has to be a far more athletic and courageous person than the mere shooter.

Whether Mr. Dugmore will meet with any more success in his appeal than has followed the work of Mr. E. N. Buxton, and others of like persuasion is a moot question. His unsurpassed photographs have revealed once more the wonderland in bird and mammalian fauna represented in Inner East Africa, and already a company, with an office in Piccadilly, has issued a pamphlet on British East Africa, illustrated by some of Mr. Dugmore's photographs, which offers every inducement to persons of both sexes to proceed to East Africa "to shoot." In this pamphlet it is stated that the report about the country being "shot out" is far from the actual truth. (Nothing, so far as I can see, is said about the attractions to the photographer.) In the list of animals which may be shot under the ordinary licence (and in this the pamphlet is not to blame, for it merely quotes official regulations) is given "four egrets of each species." What of its kind can be more monstrous than this? Egrets—white herons—are quite uneatable, they are supremely beautiful, and we now know—or ought to know—that they are large consumers of noxious flies—Glossina (tse-tse), Stomoxys, Tabanus—and all the larger gnats. For this reason alone all these smaller herons should be rigidly protected.

H. H. JOHNSTON.

WIND STATISTICS AND AËRONAUTICS.

THE practical interest shown in Germany in the navigation of the air is widespread, and goes hand in hand with a determination to utilise all auxiliaries that promise to advance the subject. Among such auxiliaries must be included the observations of wind which form part of the stock in trade of the meteorologist. The "Motorluftschiff-Studiengesellschaft" of Berlin, founded in 1907 at the instance of the German Emperor, has accordingly requested Prof. Assmann, the director of the Aëronautical Meteorological Observatory at Lindenberg, to undertake a detailed analysis of the wind data available for the German Empire. The society has provided a large part of the funds required for the work. The results have now been published.[1] They give average values, generally for the twenty years 1886–1905, for forty-nine stations. The original schedules were prepared in the various offices which are responsible for the meteorological work of the component States of the Empire. The final discussion was undertaken at Lindenberg under the direction of Prof. Assmann.

Some idea of the magnitude of the work involved may be gathered from the fact that the preparation of the primary schedules is estimated to have occupied about 2550 hours of clerk's time. It was decided to limit the discussion to the Beaufort estimates of

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[1] "Die Winde in Deutschland." Im Auftrage der Motorluftschiff-Studiengesellschaft in Berlin. Bearbeitet von Richard Assmann. Pp. iv+48; tafel xiii. (Braunschweig: F. Vieweg und Sohn.) Price 5 marks.

"I Venti in Italia." Estratto dalla Rivista Tecnica di Aeronautica e Boll. della Soc. Aeronautica Italiana. Dott. Filippo Eredia, Meteorologista al R. Ufficio di Meteorologia e Geodinamica. (Roma: Officina Poligrafica Italiana, 1909.)

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wind force and direction made at selected stations of the second order. A discussion of the results obtained by anemometer was not attempted, on the ground that differences of exposure and of the types of instruments rendered instrumental results less trustworthy than Beaufort estimates, so far as comparability with one another goes—a striking testimony to the value of the latter, if carefully made. The main tables give for each station the percentage frequency of wind from each of eight principal directions. The winds from each direction are then subdivided according to wind velocity, five gradations ranging up to 15 m.p.s. being distinguished. Values are given for the whole year and for each quarter separately.

The last chapter of the work is devoted to a discussion of the results for the upper air obtained with kites at Lindenberg. Tables of averages, similar to those prepared for individual stations, are given for each step of 500 metres up to a height of 4000 metres.

In "I Venti in Italia" we have a publication which is inspired by much the same idea. It has been prepared at the instigation of the Italian Aëronautical Society, and gives information for 111 stations in Italy. As in the German work, the observations are grouped under the eight principal wind directions, but the subdivision by wind forces is not carried out. To make up for this omission, the results for the country as a whole are shown graphically on a series of coloured plates included in the final section. In a country like Italy, where there is a marked seasonal variation of wind direction, a pictorial representation is very useful. The work has been entrusted to Dr. Filippo Eredia, of the Central Meteorological Office of Italy, whose name is a guarantee of careful workmanship.

We cannot discuss the statistical details; he who is interested in the influence of topography on air currents will find much useful information in the very complete wind-roses given with both works. The results will also be useful to aëronauts when selecting sites for practising grounds or for aërial harbours, or in such matters as the selection of the seasons most appropriate for their experiments.

NEW GUINEA PYGMIES.

In the last number of *Country Life* (vol. xxvii., p. 797) Mr. W. R. Ogilvie-Grant, under the running title of "The Expedition of the British Ornithologists' Union to the Snow Mountains of New Guinea," published his fourth article, entitled "The Discovery of a Pigmy Race," part of which appeared in the *Times* on June 3. All the information we have at present is that the expedition ascended the Mimika river, and at "an elevation of about two thousand feet they came across a tribe of pigmy people, of whom the tallest stood about four feet six inches, the average height being four feet three inches. Though at present no further details have been received except that they were extremely wild, there can be little doubt that they belong to that distinct division of the human race known as the Negritos." Mr. Ogilvie-Grant added a short account, with illustrations, of the Semang, a Negrito people of the Malay Peninsula.

Although stature cannot be taken as a trustworthy criterion of race, as it is very variable, there are certain peoples who can be described as normally tall, medium, or short; those whose stature falls below 1·5 m. (4 feet 11 inches) are usually termed pygmies, such as the Negrilloes of Central Africa, Andamanese, Semang of the Malay Peninsula and Sumatra, and Aetas of the Philippines, the three latter being usually grouped together as Negritos. The Negritos are characterised by having short ulotrichous (woolly) hair, very dark skin, moderate brachycephalism, and pygmy stature.

In a valuable essay, "The Negritos" (1899), Dr. A. B. Meyer critically examined the evidence of the distribution of this race, and, so far as New Guinea is concerned, stated that

> "A Negritic race side by side with the Papuan race nobody has been able to discover just because it does not exist, and it does not exist because the Papuan race, in spite of its variability, is on the one hand a uniform race, and on the other as good as identical with the Negritos" (p. 85).

When reviewing this essay in Nature (September 7, 1899, p. 433), I stated that I was inclined to adopt the view that the various types exhibited by the natives of New Guinea "point to a crossing of different elements," and do not "simply reveal the variability of the race," as Dr. Meyer is inclined to believe. While agreeing with Dr. Meyer that the different conditions of existence (p. 80) in New Guinea probably have reacted on the physical characters of the natives (about which, however, we have extremely little precise information), we have now sufficient evidence to prove that the indigenous population, or true Papuans, has in places been modified by intrusions from elsewhere, and of late years data have been accumulating for the probability of the existence of a pygmy population, which may consist of dwarfed Papuans, or more probably represents a Negrito stock.

In *Globus* (Bd. xcvii., May 12, 1910, p. 286), Dr. O. Reche, in describing a journey up the Kaiserin-Augusta River, says that—

> "the population consists of three clearly distinguishable types or races, two of which have long, very narrow skulls, and one a short, broad skull. Inland from the river bank there seems to be in addition to these a pygmy-like people of small growth; at all events, I found in some of the villages situated on the upper river, among other skulls, some which were remarkably small and of a special type which must have been taken from enemies living farther inland."

Dr. Rudolf Pöch stayed from December, 1904, to February, 1905, in the Kai area, which lies inland from Finschafen, also in German New Guinea. In the *Mitt. aus den deutschen Schutzgebieten,* 1907, he writes (p. 225):—

> "During the first part of the time I remained chiefly on the Sattelberg itself, and observed and measured the numerous Kai frequenting the Mission station. In them I became acquainted with a mountain tribe entirely differing from the coast peoples previously visited. In fifty men I found the average height to be 152·5 cm. [5 ft.]; the skulls are, as a rule, mesocephalic to brachycephalic. Towards the coast (Jabim) dolichocephaly becomes more usual, and the type also changes. Very small people are not infrequently met among the Kai. I have already dealt with this remarkable phenomenon elsewhere,[1] and will not repeat myself here, but simply give the figures. Among 300 adult males I found 9 [*sic*] individuals, *i.e.* three per cent., below 146 cm. [4 ft. 9½ in.] in height. The statures measured were: 133 [4 ft. 4½ in.], 135, 138·2, 139, 139·1, 140, 143, 143·1, 143·2, 145·4, 145·5, 145·6 [4 ft. 9¼ in.]. Fig. 1 shows three of these small Kai people. For the present it cannot be determined whether this is merely a variation in stature or whether we have here survivals of an older smaller race not yet entirely merged into the Kai."

In the *Zeitschr. für Ethnol.*, 1907, p. 384, Dr. Pöch states that the median height of the Kai men is 152·5 cm. (5 feet), that 3 per cent. have a stature less than 140 cm. (4 feet 7 inches), and he goes on to say that on the north coast of British New Guinea and in Normanby Island he often came across very small

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[1] *Sitzungsbericht der anth. Gesellschaft in Wien*, 1905, p. [40] ff.

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